REMARKS

Reconsideration and allowance of this application are respectfully requested in light of the above amendments and the following remarks.

The Final Rejection objects to claims 19 and 20 for reciting "this data" instead of "the data" (see Final Rejection section 1). These claims have been amended to recite "said particular data."

Therefore, withdrawal of the objections to claims 19 and 20 is warranted.

Claims 14, 16-18, 21, and 23-25 stand rejected, under 35 USC §102(a), as being anticipated by McChesney (IEEE publication). Claims 15, 19, and 20 stand rejected, under 35 USC §103(a), as being unpatentable over McChesney. The Applicants respectfully traverse these rejections based on the points set forth below.

Claim 14 defines a data transmission system comprising a transmitting side apparatus for transmitting data and a receiving side apparatus for receiving data. The receiving side apparatus measures data reception quality and transmits to the transmitting side apparatus a signal indicating a re-transmission request and the measured reception quality, if an error is detected in the received data (for more background, see the non-limiting illustrative discussion at specification page 8, line 6, through

page 9, line 3). The transmitting side apparatus detects a capacity necessary for demodulation by the receiving side apparatus from the measured reception quality, at the time the re-transmission request is received. The transmitting side apparatus then determines an applied capacity for data re-transmission based on this detected capacity and traffic conditions (see the non-limiting illustrative discussion at application page 9, line 4, through page 10, line 2). The claimed system provides the advantage of reducing the number of data re-transmissions during transmission and reception, thus improving the transmission efficiency (see the non-limiting illustrative discussion at application page 5, lines 15-26, and Fig. 2).

McChesney describes optimization of an adaptive link control protocol for multimedia packet radio networks characterized by high mobility of nodes relative to one another and having rapidly varying path loss and variable radio connectivity. For the time-varying radio channels of these networks, the transmit power, error control code rate, and symbol transmission rate are adapted to improve communication reliability (see McChesney, Introduction section on page 261, left-hand side).

McChesney's adaptive link control protocol selects a set of physical and link communication parameters that minimize transmit

energy while providing reliable point-to-point communications (see page 261, right-hand side, last paragraph, through page 262, left-hand side, first paragraph). Control headers exchanged between a source radio and a destination radio, included within RTS, CTS and ACK packets, are used to convey control and channel quality information with respect to the adaptation of physical and link layer parameters (see page 262, right-hand side, second paragraph). In particular, an RTS packet is sent by the source radio to the destination radio, which may reject the RTS if the quality of the received RTS is estimated to be too weak to support the requested parameters for the subsequent packet transmission (see page 262, right-hand side, third paragraph in combination with Fig. 2). The quality of a received RTS is estimated by measuring the RF Signal-to-Noise Ratio (SNR) for the RTS, PKT and ACK packets, measuring the received packet channel bit error rate, or other methods (see page 262, right-hand side, third paragraph).

When the source radio has a packet to send to the destination radio, the source radio proposes the symbol rate, code rate, and transmitter power level to be used for the packet transmission. The proposed values are based on channel quality measurements performed at the destination receiver during reception, demodulation, and decoding of the previous packet sent

by the source radio. These channel quality measurements are included in ACKs and NACKs sent by the destination radio to the source radio. The values proposed by the source radio are based on channel quality measurements resulting from N_A previous packet transmission attempts to the given destination radio (see page 263, left-hand side). The destination radio is allowed to make a correction to the proposed transmitter power level, for instance when there has been a significant change in the path loss or interference conditions since the last packet transmission (see page 263, right-hand side, first paragraph). As can be seen in Fig. 3, the destination radio can accept the RTS packet and consider the RTS transmission power level and the proposed symbol and code rates to suggest a power level to be used in the transmission of the packet on the communication channel. The destination radio therefore determines its suggested power level and informs the source radio of prospective changes in the transmitter power level by including its suggested power level in a CTS packet sent to the source radio (see page 263, right-hand side, first paragraph).

When receiving the CTS, the source radio compares its proposed power level to the power level suggested by the destination radio and transmits the message packet at the higher of the source-proposed power and the destination-suggested power

(see page 263, right-hand side, second paragraph). When receiving the message packet, the destination radio estimates the channel quality of the communication link and transmits these measurements to the source radio in an ACK or NACK. The source radio receives the value of the channel quality information and, based on this information and on the previous transmission parameters, proposes a power level and information rate for the next transmission (see page 263, right-hand side, third paragraph).

As is apparent from the summary of McChesney's disclosure provided above, McChesney provides a protocol for adaptively controlling the transmit power in the transmission of data packets between a source and a destination. McChesney teaches that a power level for transmission proposed by the source can be modified by the destination, which determines a prospective power level for transmission and sends it to the source. The source then adjusts the power level for transmission, before transmitting a message packet to the destination, as illustrated in Fig. 3.

In contrast thereto, in the data transmission system of claim 14, a capacity for data re-transmission and not a capacity for data transmission is determined. Further, the determination of the capacity for data re-transmission is performed by the

transmitting side apparatus. A further difference with the system disclosed by McChesney is that the re-transmission capacity determination is based on the detected capacity necessary for demodulation and traffic conditions.

As described in the non-limiting illustrative discussion at application specification on page 13, line 17, through page 14, line 15, the claimed subject matter provides a technical advantage of reducing the number of data re-transmissions so that the overall transmission efficiency is improved. Hence, transmission efficiency degradation may be avoided that otherwise could result due to a large number of re-transmissions resulting from repeating a re-transmission until there is no data error on the receiving side. Further, data can be re-transmitted efficiently even if the capacity necessary for demodulation at the receiving side is greater than the maximum transmission capacity at the time of re-transmission.

In accordance with the discussion above, the Applicants submit that McChesney does not anticipate the subject matter defined by claim 14. More specifically, McChesney does not disclose that a transmission side apparatus (1) detects a capacity necessary for demodulation by a receiving side apparatus based on a reported reception quality and (2) determines a capacity for data retransmission based on the detected

demodulation capacity and traffic conditions, as recited in claim 14. Independent claims 23-25 similarly recite the above described features distinguishing apparatus claim 14 from McChesney, although claim 25 does so with respect to a method. Therefore, allowance of claims 14 and 23-25 and all claims dependent therefrom is warranted.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

James E. Ledbetter
Registration No. 28,732

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JEL/DWW/att

Attorney Docket No. L9289.02101
STEVENS DAVIS, MILLER & MOSHER, L.L.P.
1615 L Street, N.W., Suite 850
P.O. Box 34387
Washington, D.C. 20043-4387
Telephone: (202) 785-0100
Facsimile: (202) 408-5200